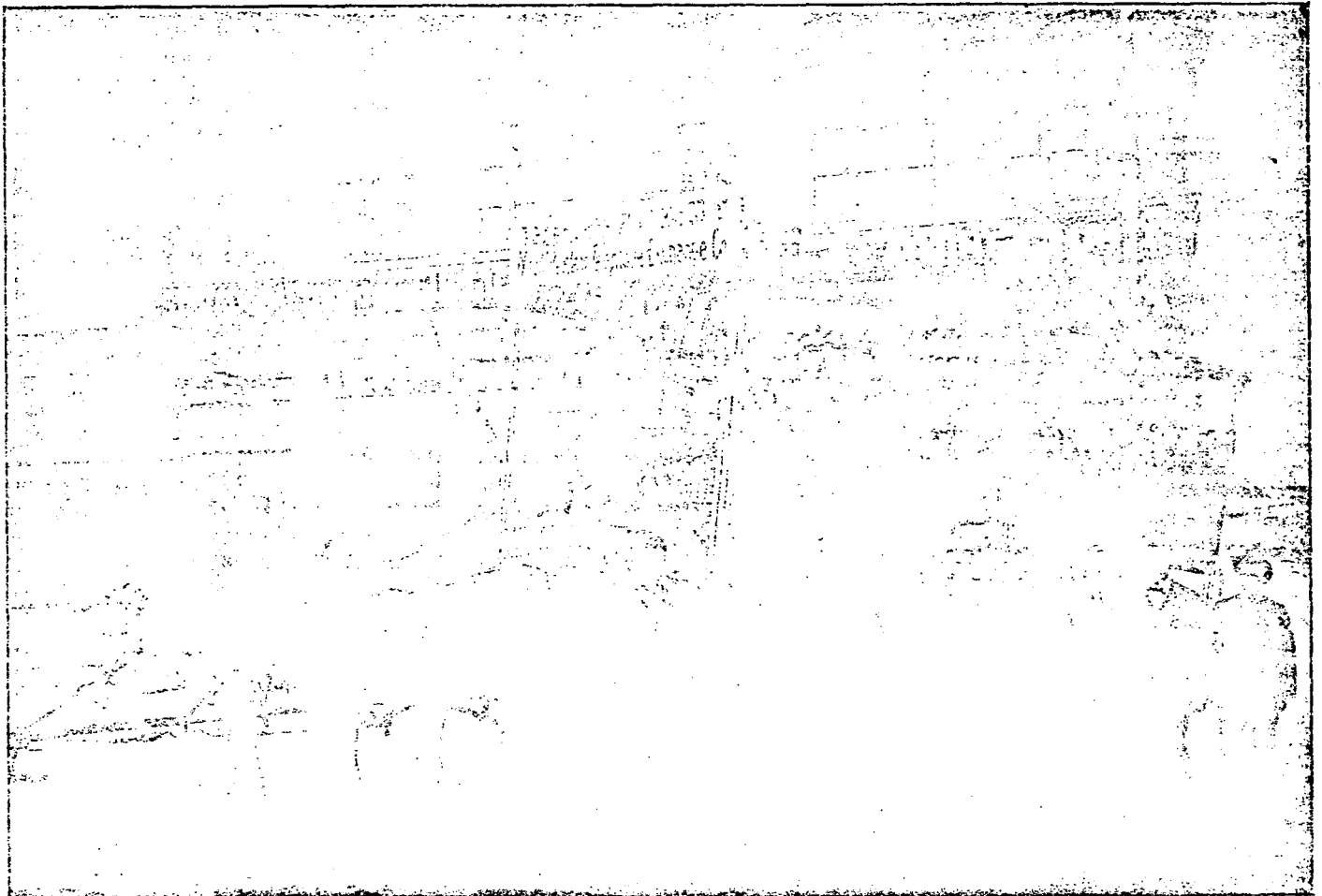


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LABOR DAY, 1898.

## Modern Storage Battery.

I.

By John Dennis.

The process of transforming energy by means of the electric storage cell has had a very checkered career. Indeed, it is only within a short time that the accumulator has achieved commercial success.

Generally speaking, this branch of electrical science is the least understood; or perhaps, it should be expressed, more generally misunderstood, than almost any other branch. Strictly speaking, of course there is no such thing as the storage of electricity, in the sense that we would pump water into a tank, and leave it there, to be drawn upon when it was wanted, although the result attained is closely analogous. It is right here, I fancy, that much of the misapprehension regarding the storage battery arises. The chemical reactions which result in the flow of an electric current from a charged accumulator are unfamiliar to most people, and they do not always stop to look into their philosophy.

The prolonged childhood of this branch of the art may also be accountable for much of the mystery surrounding it. Indeed, a writer, in describing the storage batteries exhibited at the Electrical Exhibition in Philadelphia as late as 1884, said:

"The storage batteries attracted a great deal of attention, principally because of the late improvements which seemed to give promise of practical use in the economical storage of power. This, however, is not true. A storage battery gives only about 40 per cent. of the power put into it, and the lead plates of which the battery is built soon disintegrate, and the battery becomes useless."

This, then, was the state of the art in 1884, having in view all of the then recent important improvements. The writer added:

"Several motors for sewing machines were run by the batteries, and a room in the exposition was lighted very satisfactorily by current supplied by these batteries."

At the time referred to, and for several years thereafter, conflicting patents delayed any real advancement in the art, and when the storage battery came into practical, commercial use, the transformation from a costly laboratory apparatus or a still more costly practical appliance to an economical, working factor in lighting stations and street railway power houses, was very sudden. However, the storage cell is here to stay, and the managers of many large plants are finding that the much abused and almost universally derided accumulator is changing the balance to the right side of the ledger.

Perhaps in no way can the rise in importance of the storage battery be better expressed than in an extremely interesting paper in the current number of Cassier's

Magazine, written by A. E. Kennelly of Philadelphia. Dr. Kennelly says:

"The best storage cells tested at the Philadelphia Exhibition of 1884 gave a yield, under laboratory conditions, 3.4 watt-hours per pound of electrodes with an energy efficiency of 60 per cent. when discharged at the mean current density of 12 amperes per square foot of negative plate surface; while the deterioration was comparatively rapid. At the present time storage cells are in use giving, under laboratory conditions, a yield of from five to six watt-hours per pound of charged cell, with an energy efficiency of about 85 per cent. when discharged at a current density of 4.8 amperes per square foot of negative plate surface. There are now storage batteries installed in the United States to the aggregate capacity of about 56,000 kilowatt-hours. The largest installation has 166 cells, weighs 500 short tons, and has an eight-hour discharge capacity of 22,400 ampere-hours, or 3136 kilowatt-hours at 140 volts pressure."

To those of us who have, in times gone by, pattered over the process of "forming" a storage battery, and contemplated the meagre results attained, these figures given by Dr. Kennelly are nothing less than startling. While I am not entirely clear in the matter, my impression is that the large plant to which he refers was shipped, in a charged condition, from Philadelphia to San Francisco, and there installed, having suffered no damage by reason of its long trip by rail. However that may be, it is certain that the San Francisco people are now operating a very large plant shipped under the conditions noted.

The installation of a large accumulator plant in Rochester gives the subject especial interest to those of us who reside here, and its operation in connection with the street railway will be carefully watched. It is the first plant of any large size to be installed in this section of the country, although such large installations are no longer by any means experiments.

This is scarcely the time or place to go into the technical features of the storage cell as the readers of the Worker are familiar with the principles which have come to govern the accumulator, in its commercial application. There are, however, some general facts which may perhaps be casually reviewed, without an undue waste of space.

It is now generally conceded that Faure and Brush, working independently on the same line, almost simultaneously reached conclusions which made the modern storage battery practical. It will be remembered that the Plante process consisted in acting upon lead plates repeatedly and alternately, by an electric current, until, by this action, first in one direction and then in the other, a portion of the lead had been made spongy and coated with oxide of lead, and, by a tedious process the cell was fully formed. Faure and Brush each discovered a short cut to the "forming" of the plates, and the trick was done. Brush

put the oxides in grooves in the lead plates under pressure, while Faure mixed the oxides with dilute sulphuric acid and filled what are known as grids, in the plates.

The electromotive force in the elements of a secondary battery vary. Under some conditions it is but a fraction of a volt and in others as high as nearly three volts. The present commercial element is rated at about two volts. In order to increase the voltage the cells are connected in series in a manner analogous to the windings of an armature and with like results. For instance, I have been using a small battery of five cells, thus connected in series. It has a capacity, at its normal rate of discharge, of five amperes and ten volts, and its efficiency is easily upwards of seventy-five and perhaps eighty per cent.; in other words, for each 100 watts of energy expended in charging the battery, the chemical reaction in discharging will generate from 75 to 80 watts. Having in mind the power of this small combination of elements, the enormous capacity of the large installation, with its 140 volts of pressure, referred to by Dr. Kennelly, is the more easily understood.

It would be interesting to trace the reaction of the storage battery but limitations of space admonish me that the subject must be left for another paper.

It is, however, more with some of the commercial advantages of the storage battery that we have to do in the present paper. That it is now attracting much attention on the part of those who are responsible for station management cannot be gainsaid. Owing to the facility of transportation, small storage batteries have come into use for many minor purposes, where they give excellent satisfaction. In the operation of electric cabs, automatic pianos and other musical instruments, and in some therapeutic purposes, they found many opportunities. It was in a Rochester laboratory that the first use of the accumulator in connection with a Ruhmkorff coil in Roentgen-Ray experiments, was made; a use which has now come to be quite general. But it is not on the pavements, in the concert hall, the physicians' office nor the X-Ray laboratory that the accumulator, weighing many tons and generating thousands of electrical horse power, finds its field. It is in carrying the peak of the load in railway and lighting stations and lowering the load line on the cards which are so eagerly scrutinized, that it finds its proper sphere. By its means loss is changed to profit, and opportunities, otherwise impossible, are opened for the use of the electric current.

The capacity of an electrical station must equal its highest peak at any one time, no matter how low it may average. A street railway generating plant must be prepared for the load at rush hours, as well as during the hours of comparatively

light traffic; and this is also true of a light or power station. Inasmuch as the surplus current can be sent to the accumulators during the hours of light load, to be drawn on as a booster, when the heavy pull comes, it does not seem to require much argument to prove that an adequate accumulator plant betters the load factor of a station. In case of all water power, it will plainly admit of less generators; in case of a steam plant, the effects will soon be seen at the coal pile as well.

It must not for a moment be supposed that the storage cell will work the marvels which have been claimed for it by many promoters; it is not and never can be, of itself a generator of energy. Dr. Kennelly tells us that its efficiency, (presumably under the most favorable conditions) is 85 per cent.; that for every 100 watts of energy contributed to the accumulator by the dynamo, the chemical reaction will return eighty-five watts. Whatever may be the voltage at which the accumulator is charged, the output of the storage cells, in pressure, will depend upon the number of plates, and the current strength upon the surface area of the plates or the weight of the spongy lead.

One of the advantages in the use of accumulators, whether in large or small units, is the steadiness preserved in the output, regardless of the manner of working of the dynamos by which they are charged. No matter how much the current utilized in charging fluctuates, there is always a steady current from the storage cells. This fact, alone, would seem to make an accumulator outfit an economical factor in many small stations; for, after all has been said, economy always gets back to the dynamo room, and absolute regularity of output means that a pretty good quality of generating machines must be used. The load factor, again, is the deciding point between profit and loss. If a dynamo or dynamos are fully occupied during the light load hours, and their product held for the "push," it does not require much mathematical skill to figure out the utility of the storage outfit.

This, however, is now no longer a question of argument or calculation. It has been found that, in any installation where there is a surplus of energy produced during certain hours of the day, it pays to transform it, and use it in helping the load over the peaks.

#### AN IMPATIENT GUEST.

At one of the Mackinac hotels, loved by its frequenters for its associations, in spite of lax management, a new guest demanded a bath.

"My dear sir," said the proprietor, "next year we shall have two of the finest and best equipped bathrooms on the island."

"But," objected the guest, "I want a bath this year."—Chicago Post.

#### From a Kicker.

Editor Worker and Brothers:

It is a long time since I wrote a word to our paper and as I used to do before, I will now do again, kick on the general manner in which things are run in this glorious land of the free and shelter of the brave.

Now that the war is practically over and our soldier boys are coming home, the fact has begun to dawn on their brain that the positions by which they gained their livelihood have been usurped by the girls of the land and also has been divided up among the force so that the large-waisted proprietor or manager has been able to pass a larger dividend to the bloated stockholder who does not know how to spend that which he already has. Now, dear editor, and you other interested wage-earners, what are you going to do about it? The poor devils broiled and roasted by day and soaked and chilled by night who must be shot and killed to get his name in print, is walking about on his fast-fading glory—for you know the American people are prone to think of something new every day and soon forget the troublesome times of the past—thinking of the job he left behind him when he went to fight for a few starving slaves. And, dear readers, the fact must surely be impressed on your minds that between the girls, immigration galore, the prison factories, and swift labor-saving machinery, men are finding that to get work is a deal harder than to work after he has found it, and the price is dropping lower every year.

Oh, you will say, the girl must have clothes and live also. Well, so she must, but I think she could live better and truer if she was at home surrounded by family ties, than to drag out a miserable existence at \$3.50 or \$4.00 per week, and scrimp and save and do all manner and kinds of menial work and then wonder what she has done to deserve such treatment at the hands of her fellow creatures. Well, this is what she did—took the place of a man at half or one-third his wages and made a tramp or criminal of him. And the end is not yet, at least 75,000 of our brave boys are still in war and someone must pay the tax to keep them there. If not in actual warfare, he must be fed and clothed just the same, so the little stamp came out, and, as usual, the people pay the tax. The railroad monopoly gave in, but if it had wanted to do as the express companies are doing, we would pay more than we now pay. Just because the tax bill framers did not stipulate who should pay for the stamp, the express companies make the shipper pay all. I am perfectly willing to pay my share, but I'll bet I voice the will and sentiments of 50 millions of people (the rest are interested in monopolies) that the express companies should be made to stand half of the tax.

Well, I am going to go on with the old

grind and say to the boys this, kick and howl and keep it up—30 or 40 years ago your fathers worked 12 and 13 hours a day for a great deal less than we are getting now (and we earn all we get) and nothing but labor organizations have kept up the price and shortened the hours. In the Michigan State prisons now they make three to five thousand shirts a day, which are laundered and boxed, shipped to eastern cities and sent right back again to cities near the place of manufacture and sold at \$1.00 apiece. A law should be passed to have all prison goods labeled "Prison Make" and you would soon see idle prisoners, and what would you do with the convict? The simplest thing in the world. Take him out on the road and make the roads of every state passable for all manner of vehicle from bike to truck, and I think crime would decrease. If some wanted to escape, plug 'em full of lead and the world would say amen.

Your truly

ANN ARKIST.

#### SINGLE TAX LOGIC.

George said, "I do not care how men vote but how they think." Most men only think of how they best can get along under the present condition, not questioning why the condition is, as though it was something out of the control of human agency, like the weather. This lack of interest in the social question has left it to the politician and he uses his opportunities to advance his personal ends. I would not be understood to say our interest should begin on election day, as it usually makes little difference, then for special privilege has the program already made and the subsidized press of the country have injected into their readers a great amount of enthusiasm for issues that do not disturb special privileges and of course will make no difference how votes are cast.

Political questions should be questions of a more equitable distribution of wealth, and if we care for ourselves and families we should interest ourselves in it on election day and every other day in the year. It is the question of all questions, for by the present laws the few are enabled to take what the many produce, though if we would use the power of ballot intelligently those that produce would have and the getting of a living would not be a fight for an existence where a great many are starved or driven to suicide.

Single taxers would not change human nature, they would make conditions so man could be his natural self; you see men in all walks of life to-day take advantage of their fellowmen and you see this so constantly you look upon it as natural, but it is only the law of self preservation asserting itself when conditions are such that he must; the single tax would change conditions so he would never fear want, he would then think and feel for others as necessity would not be his master as now.

There are only two kinds of value; one, the product of labor and belongs to the individual who produces it; the other, the value of land that is made by the presence of population and belongs to the community that created it. A just government would leave to the individual what he produced and take for its expenses that which belongs to it; to do this is to adopt the single tax.



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**MAJORITY RULE.**

Recent incidents have resulted in an unpleasant condition, in which the authority of the E. B. has been questioned, in matters upon which a majority of the E. B. had decided, and causing a state of affairs which should have no place in our Order.

It is not the purpose to open any old sores, nor to aggravate conditions by rehashing the events which may be properly ascribed as their cause. It is the intention, however, just here and now, to call the attention of members of the Order to one or two constitutional facts, which, if viewed in their proper light, will enable us to avoid conditions which can only result in injury to our organization, and which must be shunted.

The first proposition we wish to lay down is this: That, under the constitution, the decision of a majority of the E. B. goes, in any matter which comes before that board for adjudication. We have not, for a moment, lost sight of the referendum; and do not, for a moment, purpose to lose sight of it. But, in the absence of such a vote, the decision of the majority of the E.

B. in the exercise of its proper functions, is for the time being the law of the organization. When one stops to think a moment, the necessity of just such a condition will at once suggest itself. During the interim between conventions some constituted authority must exist, in order that questions arising in so important a body as the Brotherhood may be adjudicated. The power and authority to adjudicate these questions is not vested in any one man; it is vested in the E. B., and by the provisions of the constitution a majority of the E. B. must decide.

It makes no manner of difference how high rank, officially, may be held by a person; he must acquiesce in the will of the majority of the E. B. And this applies particularly to members of the E. B. How long would any Order continue to exist, if one man was allowed to set up his authority as against the majority of a duly constituted board? If it be urged that the one man is right, and that his colleagues are all wrong, and that one man is allowed to proceed to overthrow the action of the majority, or to officially proceed in opposition to that majority, the seed is sown which would soon result in the destruction and utter disruption of the organization.

The second point which we wish to emphasize is that one-man power has no place in our organization. One-man power is the rock upon which unionism is very prone to split. The moment that the reins fall into the hands of any one man, he proceeds to drive to the devil; and it is the history of unionism, the world over, that he takes his organization with him. And this is not saying, either, that the man who gets this idea of autocracy in his head, is necessarily actuated with unworthy or improper motives. He may be imbued with the notion that his own ideas are the best, no matter how much they may run counter to the constitution, nor how much they may differ from the opinion of a majority of his constitutional colleagues.

If the Brotherhood of Electrical Workers had desired to commit its interests into the hand of one man and had done so, the situation would have been radically different. Very few men, in this imperfect world, are capable of doing all the thinking for an organization of the importance of the Brotherhood. It is only "in the country of the blind" that "one-eyed men are kings." We do not constitute the country of the blind, by any means, and we do not wish any one man, whose head has swollen to the extent that he believes that he is a king, to rule over us.

The plan of leaving all questions to be decided by an executive board, elected by delegates from the several Locals, has proved a bulwark of safety to the organization, and will continue to do so. It has been said that "in multitude of counsellors there is safety." This is particularly true

in the organization to which we are all proud to belong.

Now let us get together, and abide by the decisions of our E. B. If any official of the Brotherhood has imbibed the idea that he "is the whole thing," let him understand that he must, whether he will or not, abide by the rule of the majority. It is the will of the majority which makes right, whether it is in a commonwealth, or in an organization like the Brotherhood, for mutual benefit.

To sum this whole matter up in a nutshell, let us quote two sections of Article XXIII of the constitution:

"Section 4. Any question or principle of law not defined in this Constitution or in the rules for Locals, shall be referred to the E. B., and their decision shall be binding as law until reversed by the N. C.

"Section 5. If at any time the E. B. deem a new law necessary to govern the Brotherhood in a matter not provided for in this Constitution, they may recommend a clause to the L. U.'s to be voted on, and should a two-thirds' vote support the recommendation, it shall become a law.

**ELECTRICITY ON WAR VESSELS.**

In the new navy, which will be the legitimate outcome of the experiences of the war with Spain, there will, of necessity, be many new features. Brilliant as was the work of officers and men, it was made clearly apparent that the ships of the navy could be made still more effective.

A notable illustration of some of the changes which actual warfare has shown to be desirable is seen in the recent order for the construction of a large number of twelve-inch guns, to replace the present guns of thirteen-inch caliber. It is the conclusion of the ordinance board, based upon war conditions, that a twelve-inch gun, with smokeless powder, will give a projectile fifty per cent. greater muzzle velocity than can be communicated to a twelve-inch shell with ordinary powder; and there is the additional advantage of not being under the necessity of waiting for the smoke to clear while in action.

It has also been learned that the advantage accruing from the operation of all auxiliary apparatus on board a warship by electricity had been much underrated. That the value of this element is now more fully appreciated is shown by the order to equip the protected battleships throughout, thoroughly, with every appliance which will utilize electricity advantageously in the operation of a war vessel. It would seem, in view of these changes, that the authorities would be warranted in going a step further, and utilizing a greater number of skilled, practical electricians. Under present conditions practical electrical workers attain to a not insignificant degree of technical knowledge of the ap-

pliances which they operate. A carefully selected staff of all-round, practical electricians, each highly qualified in his specialty, would make a small but very important addition to the personnel of a warship's crew. With the additional appliances which are now an acknowledged necessity, it becomes desirable that these appliances should be worked to the best advantage possible. If it becomes necessary to cut an ocean cable, the work should not be done, as was the case at Guantanamo, by unskilled workmen, using only such tools as could be supplied by the engine room kit. While men were hacking through the cable, with clumsy and inappropriate tools, they were forced to remain under the fire of the enemy and several lives were sacrificed. Each war vessel should be supplied with the most perfect appliances for such work, and these appliances should be operated by men specially qualified for the work. It should be the work of but an instant to sever the strongest ocean cable, simultaneously with its being grappled. If, as at Manila, it is desirable, not only to cut the cable but to bring the severed ends on board, and operate the line, it should be within the power of the practical electrical staff to do so. While the appliances for operating ocean cables are somewhat delicate, they can be provided for each war vessel as a portion of its reserve electrical equipment, and there should always be a member of the practical staff who is competent to manipulate them.

The value of ocean cables as a factor in war has been fully demonstrated during the past few months. That it will figure more largely in the future there can be no doubt. In this connection, it is interesting to note that a practical electrician of Rochester has devised a method of aiding the operation of coast defense scouts in time of war which will result in an enormous saving of money and time. The plan is very simple. A telegraph line is extended the entire length of exposed sea coast, say from Eastport, Maine, to Galveston, Texas. At stated points along the coast are stations, from which light cables extend to sea, a distance of, say 500 miles. The outward ends are along a given line of longitude and are buoyed in such manner that they can be readily found by a scouting vessel or any war vessel. When it is desired to communicate with naval headquarters, the end of one of the cables is brought aboard and connection obtained with the shore line. Once the business has been transacted the cable is again replaced. The system has been thoroughly worked out in all its details and will be brought before the naval authorities.

#### WIRE PULLERS AND CABLE WORKERS.

In an editorial in a recent number of an electrical magazine, the writer took occa-

sion to say that there is very little satisfaction in being called an electrician, when "wire pullers and cable workers" are placed in the same category.

It goes without saying that this writer meant, by the term "wire pullers and cable workers," to designate all practical workers in the electrical field, as distinguished from the young men who are employed to exploit their technical knowledge in the editorial pages of magazines like the one from which this brilliant extract is taken. The writer evidently singled out men engaged in the two specialties, because the words by which he designated the general class of practical workers flowed easily from his highly-polished technical pen. He meant the great body of skilled electrical workers, who make his own technical and literary vocation possible; without whom there would be no place for electrical journalism, and the application of electrical principles to the everyday affairs of life would be an impossibility.

Now, it is not worth while to feel aggrieved, when young men, some of whom cannot tell a jack switch from a jack pot, apply epithets to practical electrical workers. They are connected up that way, and they cannot really be blamed for trying to earn their salaries by exploiting their superficial electrical knowledge, and belittling actual workers. At the same time, this particular writer, even from his own point of view, is extremely unfortunate in his selection of objects to ridicule. It so happens that men in the two specialties referred to play an unusually important part in modern electrics, in so far as electrical principles are applied in a commercial or money getting way. If the critic of the "wire pullers and cable workers" had been conversant, even a little bit, with the regulations enforced by the Board of Underwriters, in the matter of wiring and subway practice, or had held converse with some of the experts of that rather powerful body, the sentence under criticism would not have been written. He would have learned that, under purely theoretical conditions and in the absence of the most skillful, practical, electrical workmanship, the danger from fires in using the current is almost prohibitory. He would have learned that, from being the cause of millions of dollars loss in the way of electrically caused fires, such losses, in almost every city in the union, have been reduced to a minimum, by reason of the practical electrical skill, painstaking care and integrity of the despised "wire pullers and cable workers." Let the man who writes thus glibly attempt to secure a license as an inside wire man and it is dynamos to carbons that he will not be allowed to wire a poultry house. Unless he knows more about practical work than his article shows he knows about practical workers, it would

be prudent for his accident insurance underwriter to cancel his policy before he ventures into the manhole of a subway.

Slurs of this character are altogether too frequent, and while they do not particularly affect the large and important body of men to whom they are directed, they are not pleasant to read or hear. The simple fact, known of all men, is, that these technical electrical writers do not monopolize all of the information and knowledge, and it is not true, as many of them seem to suppose, that "when they die all electrical knowledge will die with them."

#### QUESTION BOX.

It has been my impression for several years that practical, working electricians are not living up to their opportunities in the matter of obtaining technical knowledge of the element with which they are in such constant familiarity. Perhaps this impression has been strengthened by close and intimate acquaintance with the men who are actually responsible for the smooth and efficient work of the electrical appliances which have come to figure so largely in the conveniences and economies of the present day.

It has been the experience of every conscientious technical student of electricity, who has carried out a determination to grasp the practical working of the element as well as the theory, that his most valuable knowledge was obtained from the man at the machine. One may patiently study out the diagram of a given appliance, and even watch its operation carefully, and at the last he will, I had almost said of necessity, perfect his knowledge by obtaining information from the man in overalls who is manipulating the switch.

Under these conditions, the conclusion is irresistible, that the converse of the proposition is true; that there is absolutely no reason why the operator of the machine should not understand all that is known concerning its workings, by the most profound technical electrician. In other words, there is no reason why an intelligent operator of a given appliance should not learn as much about it as the man who devised it. This may be regarded as advanced ground, but it really is not; it is a plain statement of fact. It is sometimes true that the practical men who have to do with modern electrical machines, come to know more about them than the man who made them.

It is not necessary to go outside of the city of Rochester to find a case which is directly to the point. Several years ago the Westinghouse company installed a machine in Rochester which was the first of its kind. Whether it would be the last of its kind was to depend upon the workings of that particular generator. It was then a unique piece of apparatus, and the

result was watched with a deal of interest. It was described as a combined alternating and direct current generator and it was certainly novel at the time, although its workings are now well understood. At one end of the shaft it supplied a continuous current of 550 volts potential, while at the other end it supplied a two phase alternating current, the voltage of which was rated at 380 volts. A single wound Westinghouse iron-clad railway generator revolves in an eight pole field, at 750 revolutions per minute, giving a frequency of 6,000 per minute. It came my way to write a description of the generator, and I am free to confess that it was at first a Chinese puzzle. The expert who supervised the assembling of the machine frankly gave the constructor's idea of the capacity of the generator; I have seen it carrying double the load which had been technically ascribed to it, without a rattle, under the skillful manipulation of the practical electrician whose duty it was to handle it. I have also seen, at the same station, six of these machines, each the duplicate of the first, working in multiple at both ends, and carrying a load which the constructor never dreamed of. But that is another story. It required, however, the manipulation by a practical electrician, to get all there was out of the machine and do it safely.

Now does it not stand to reason that the practical electrician who could thus exploit a machine to an extent not thought of in the conception of the apparatus, can grasp the technique of that apparatus in its entirety? It is certainly true that I was unable to reach a full understanding of this generator until I had several chats with the man who was running it. In fact, as I have intimated, it had constitutional peculiarities which were not known until pointed out by the practical electrician who had it in charge.

There were a good many curious incidents in connection with the installation of that plant of combined machines. I was standing beside it one day, soon after it was placed in commission. A teacher of electricity was pointing out the peculiarities of the machine to one of his students in particular, and myself incidentally.

"This is a very simple machine" said the professor, who was one of those expert instructors who teaches a beginner the art of electricity in ten lessons. "You see this shaft. On the shaft there are two separate armatures. One revolving inside of the other. One of these armatures produces a direct current at one end of the shaft and the other produces a 2-phase alternating current at the other end of the shaft. The direct current has a pressure of 550 volts and the alternating current has a pressure of 380 volts. You see each armature thus produces electricity in differ-

ent forms and at different pressure from the other."

It was my friend the station man who casually remarked that he never knew before that an armature could generate a continuous current, and he asked the professor, with the most innocent air, what they put the commutator on one end of the shaft for.

This brings me back to my first proposition, that the practical electrician has the strings which lead to full technical knowledge of any bit of electrical machinery. It is the following out of these leads, and learning the reason for the various phenomena which he witnesses, which, in my judgment, offers such a flattering field for the intelligent practical electrician. It is, to be sure, not at all strange, in view of the incident I have just given, that practical electricians come to regard the superficial knowledge possessed by some of the quasi teachers, and their arrogant assumption of superiority, with a good deal of contempt. At the same time these characteristics should serve to stimulate those who are close to the actual conditions of electrical phenomena, to trace results to causes. If I am right, the field is not only open and inviting, but the need of such attainments is urgent, in view of the advancement which will, I fancy, be facilitated by the technical and the practical being brought into closer touch.

How can these results be best accomplished? This is a question which can be more easily asked than answered, perhaps, yet it is open to many suggestions. One pertinent suggestion is the utilization of meetings of locals, in accordance with one of the provisions of Article 2, which includes one of the objects of the Brotherhood, and makes mutual improvement of the members one of the laudable objects to be attained. I do not mean exactly that the meeting should be turned into a school—some of us have had some experience in electrical schools. I would, however, introduce into a local about the only really valuable feature of the schools; that is talk about practical work by practical electricians, and have them give their experience in running practice back to the theory upon which it based.

It has been the case, in all electrical schools of which I have known, that it is invariably some practical electrician who conveys the real information of value. It is this feature that, in my judgment, should be given a place in the locals. I think the most practical method is the introduction of a question box, to which, perhaps, half an hour can be devoted. A question box, rightly conducted, by practical electricians, can be made a source of wonderful profit. Let the box be opened by the secretary, and let the discussion be general. Preferably, in order to realize the most benefit, the greater portion of the

time devoted to each question should be allotted to some one to whom it is specially referred, and he should be made acquainted with the nature of the question the week previous. Thus if the questions are judiciously selected, and members give to them their best thought, there will be an interchange of views which will benefit every member of the local.

It is probable that a local does not exist, in the present high degree of intelligence acquired by practical electricians, where there are not members who have devoted more or less time to the technical study of the speciality upon which they are practically engaged. These are the people whom it is desirable to draw out. A little of this sort of thing has a wonderfully stimulating effect upon all. It matters little if men differ in opinions; except that such friendly differing has a salutary effect in brushing up one's ideas.

It is as true, in the sense in which I am considering it, as in any other, that "in union there is strength." And the object of the Brotherhood of Electrical Workers is, above all others, the mutual benefit of its members.

In the September number of the Worker there is an illustration of just what I mean in this matter of question box, and brushing up the technical knowledge of the members of the Brotherhood. Brother Maloy of No. 37 has noted the peculiar action of one of four recording wattmeters on a two phase alternating system; he found it necessary to connect this particular meter in "hindsight before" in order to make its indicators travel as do the hands of a clock. Now the brother has pursued the ideal course in presenting his problem to us. First he states the case clearly and then furnishes diagrams showing the situation exactly. It is questions of this nature that I would like to see drawn out of a question box in every local. Then, after full discussion and interchange of views, let the most interesting question be sent to the Question Box of the Worker, and thus give us all a chance. It is not my intention to discuss Brother Maloy's question; I simply bring it up by way of a very pat illustration of what I am trying to say. Perhaps, however, it is not greatly out of place to suggest that if the brother should dissect the backacting recording wattmeter, he would find that the artist who assembled the apparatus at the factory connected up the armature in reverse fashion. However, I hope that there will be an answer to the question from many readers in the present number of the Worker.

I don't know how it is with others, but I have always found the diagram to be a wonderful aid in asking questions, and in trying to answer them as well. I trust that we shall see many of these diagrams of peculiar conditions in future numbers of the Worker.

#### QUESTION BOX.

Rochester, N. Y., Oct. 8, 1898.



## OUR LOCALS.

**TO PRESS SECRETARIES.**—The closing date for all communications is the 10th of each month. So be sure and have everything in by that date.

### Local Union No. 9.

Chicago, Oct. 7, 1898.

Editor Electrical Worker:

As I did not write a letter last month, I will try and get one in this. Work is still quite plentiful here, but there were a lot of the boys from No. 3 came up and helped out, so there is no large demand for men just at present. The Edison is doing a lot of overhead work, which is a new line of business for them. The high poles and long wires were too complicated for their electrical experts, so some of their work falls our way now, and if you care to hold an office there, you had better be known some place else besides on the works. The City is still doing a lot of work. The Northwestern Elevated has resumed work, and as soon as the iron-work is completed there will be a lot of electrical work to be done.

It is with regret I have to announce the death of Bro. Frank Masterson. He was at work on a pole cutting down dead wires alongside of a street car line. The span wires were very slack and Bro. Masterson caught hold of a wire that was lying on the guard wire, when a car came along, shoved the trolley up against the guard wire; just at that time he touched the back of his neck against a grounded wire, killing him almost instantly. The boys turned out in large numbers to view the remains before they were sent to his home in Iowa, accompanied by Bros. Collins and O'Neill.

Bad luck seems to be in pursuit of Bro. J. L. Conger. He had only been to work about six weeks after recovering from a blow on the head from a falling pole, when in going up a pole he got a shock and fell about 26 feet, breaking four ribs. He will be laid up for some time.

The electrical engineer of a street-car company once told me that he had hard work to make the officials of his company understand why the linemen should get more pay than the men working at track work, and he claimed these officials were intelligent men, too. The linemen are the poorest paid class of mechanics there are in this country to-day. In the bad weather is the time when he generally has the most to do, and he takes chances that no other man on earth would take. If he gets a poke, some of his fellow-workers grin and ask him if it was warm. If he gets killed, another man takes his place and the work goes on. Oh, I tell you, the workingmen are the stuff; they are going to have a

jubilee day here before long, to celebrate the return of peace. That is, I suppose it is the workingmen, for they are the ones who did the fighting. Bro. Wm. McKinley has got a day off and will be here. Bro. Alger expected to come, but had so many rush orders for new lines that he can't get off, so he sent his straw. Bro. Dewey was expected, but work had banked up so the Super. told him he would have to work. The program of the day is a street parade of Illinois troops, after which they will listen to some very able speakers and then disband for the day and go home for lunch; but the better (?) class of people, such as the millionaire contractors, who stayed at home and helped the Government spend its money for their goods, and the high officials, and in fact anybody who has got a few millions and worked up an invitation, will repair to the Auditorium Hotel, where a very sumptuous repast will be spread at fifteen dollars per plate; after which there is to be a ball. But I don't expect there will be any of the privates there, for they will be so full of those speeches that it would be impossible for them to dance, anyway.

If you get time to come to Chicago, try and get here about the 5th of November, for that is the date of our next ball, and it promises to be a grand affair.

At the regular meeting of L. U. No. 9, N. B. E. W. of A., held October 1, 1898, a committee was appointed and the following resolutions were reported and unanimously adopted:

Whereas, It has pleased Almighty God in His infinite wisdom to claim, by death from accident, our worthy and esteemed brother, Frank P. Masterson, and

Whereas, We bow in humble submission to the will of Him who doeth all things well, we realize that in his death his family lose a kind and loving son and brother, his fellow-workmen and associates a true, noble-hearted and generous friend, and our Brotherhood a faithful worker and member, whose memory we will ever cherish with affection and regard; and

Whereas, The sudden removal of such a brother from our midst leaves a vacancy and shadow that will be deeply felt by all members and friends of our Brotherhood, be it therefore

Resolved, That we express to his family and relatives our deepest and most heartfelt sympathy in this their hour of bereavement, and commend them to our allwise Creator and Father, who will comfort them in their hour of trial and deep distress; and we trust will reunite them on Eternity's shore, an unbroken family; be it further

Resolved, That our charter be draped in mourning for thirty days, that these resolutions be spread upon the records of this union, published in our official journal, and an engrossed copy be sent to the family of our deceased brother.

C. WARREN BEACH,  
JAMES S. SANDERS,  
JOHN A. POLING.

J. E. POLING,  
Press Sec'y.

### Local Union No. 17.

Detroit, Mich., Oct. 4, 1898.

Editor Electrical Worker:

Old stand-by No. 17 sends a greeting to all good union brothers.

Everything is lovely up in this neck o' the woods. Some of the electric railway jobs being completed here, some of the brothers have gone to Grand Rapids to work on the new city lighting plant being installed there. There is always work for good union men, for you know the old saying "The Lord takes care of his own."

The new State Telephone Co. has several of our union boys out at Ann Arbor. It is a "working-card" job, and in charge of Bro. James McQuade (the prince).

The Michigan Electric Co. was completely burned out last month, but such is the energy of the firm, that before the blaze was out they had secured new quarters, and had telegraphed for supplies and material for doing business. They are practically a union firm, and will get to the front again all right.

The communications from the grand officers and the executive board concerning the strike here this summer were received, and I think they were all eminently fair in their conclusion, when all the circumstances are considered, and if there is anything unfair it will, undoubtedly, be remedied at the next convention.

As your humble servant expected to go to Arkansas for a while on business, he resigned the office of treasurer, and Bro. Geo. Harrison was elected. We gave him the office because he is a good man, and not "because he needed it." In order to lend dignity to the office, I understand, he is going to let his whiskers grow the same as last winter. They were the admiration and envy of every billy-goat in Michigan.

Thanks to Bro. Thomas Forbes and a few others, we will soon have an iron-clad ordinance in Detroit for the protection of linemen in the following of their occupation.

We are taking in new members every meeting, and, with the new style of initiation, the ceremony is quite impressive. Vice-president George Brown puts them through a preliminary examination. He puts on that Chilkootee Pass voice of his and it sounds so frosty that it checks the circulation in the extremities of the poor tenderfoot, but it serves to make him remember his obligation all the better.

Unionism is spreading here and we have large meetings and hot discussions, and since Brother (constitution) Malone has instructed President Scanlon in parliamentary rules, if more than one person tries to speak at once you ought to hear the big gavel come down. Loud! I should say it did come down loud. Already property within three blocks of our hall has depreciated 20 per cent, and Hallelujah

Jim of the Salvation Army, with the big drum, around the corner, wonders where he is at, but we have order just the same, that is what we have the big gavel for, and Dick's right arm to wield it.

We still have some scabs in town but we are getting them on the run to a certain extent. They are tired-looking cusses. Scabs are always tired, and the most of them look unwashed. If you should give one of them a bar of soap and tell him to use it, he would probably take it internally.

I was talking to a non-union electrical worker one day about joining the Brotherhood, and his excuse was that the union took away a man's independence. What do you think of that for an excuse? Any-one with as much sense as a fried oyster knows that it isn't so. I will bet my head—which is no great stake—that there is more independence under the toenails of a good union man than there is in the whole carcass of a man that will give that kind of an excuse for not joining his fellow-craftsmen, and fighting for his rights. I always think that these non-union "grafters" must have sawdust or other cheap filling in their heads.

Before the Brotherhood was organized I was knocking around over the west, and met all kinds of men, and saw all kinds of life, in the towns and on the plains, and I was sometimes a rough-rider of the blind-baggage and the freight train, and no matter where I met union men of different crafts with their cards, I found they were men I could tie to, and put dependence in, and that under their ragged vests beat honest hearts, and I made up my mind that if the opportunity ever came I was going to be a union man, and when First Grand President Henry Miller came to Detroit to organize, I was settled down, back east here, and helped to organize No. 17, of which fact I am proud, for I have seen lots of wrongs righted through the influence and efforts of old No. 17, and I expect to see more.

We were all pleased to see in the September Worker that two unions had been added to the body. We are glad that the National Brotherhood is growing in numbers and in influence. We are happy to see the growth of all the crafts that are affiliated with the American Federation of Labor the same as we are, for we will soon have a grand army of union men, invincible, and unconquerable.

In conclusion, union brothers, stand up for your rights. The principles of unionism are ringing on the ears of the common people like a bugle call. They are being shown that organized labor is the bulwark of their liberties, those liberties that were bought with so much suffering and so much bravery at Valley Forge and Bunker Hill, and we are being so strengthened that, should any imprudent coterie of the

would-be aristocracy undertake to curtail those liberties, or put some great wrong upon us, they will hear the voice of organized labor boom over the county like the snllen roar of a siege gun.

DAN E. ELLSWORTH,  
Press Secretary.

#### Local Union No. 18.

Kansas City, Mo.

Editor Electric Worker:

It is my duty to write once more to the journal and here I am with nothing to write. This was carnival week in Kansas City, the most exciting week of the year. Old 18 has braced up and we are going to give another one of our grand balls, to take place November the 2nd. Every member of No. 18 is compelled to take a ticket for the dance and if they don't they will be fined \$2.00, which will go into the general fund, so the boys had better dig up \$1.00 for a ticket. We thought as the proceeds was to swell the treasury, the boys should all help, as we don't know who will be the first to want sick benefits, and we all know that if we were sick that it would be some comfort to know that we would have help.

H. WATROUS,  
Press Secretary.

#### Local Union No. 23.

St. Paul, Minn., Sept. 13th, 1898.

Editor Electrical Worker:

I have had no time to write lately and nothing of interest to write about, but at last something has turned up. As our first September meeting would be on Labor Day we decided to hold our meeting before the regular day and see what we could do to show the good people of St. Paul what we could do in the line of a turnout. We had a great meeting of just eight members. It certainly did not look very encouraging, but it so happened that those eight were all workers. Not one kicker or drone amongst them. To join the parade with eight members would hardly do, so we decided to get up a float and I am glad to say we made it a great success. It was the only thing in the parade. We will send you a picture of the float and we hope to see it reproduced in the Worker, so I will not describe it; but simply say that we had a regular electric light plant, engine, dynamo, arcs, incandescent lights, and all the lights you see on the horses showed up in great style; and the fans decorated with red, white and blue ribbons going at full speed. We, of course, had all kinds of bells and we did not save the batteries either. The Telephone Co., St. Paul Gas Co. and Taylor & Hough furnished us material for the float. Too much praise cannot be given to Bro. Hakinson for his untiring efforts to make it a success. A good many members of No. 24 came over some time ago and invited No. 23 to join

them in their parade on the evening of the 12th. We, of course, accepted, and last night about twenty of us went over and marched with them. There were over three thousand men in line. The electrical workers made a fine showing. They carried, in a carriage, a transparency, on one end of which were the words "We brought the first news from Dewey," which seemed to meet with great favor. After the parade the boys took us to the hall and they did not Dewey a thing to us. Say, those Minneapolis boys are dandies and I believe every one of them would make a first-class St. Paulite. We will always have a soft spot in our hearts for our brothers up the creek and hope to have an opportunity in the near future to get even with them.

B. A. SCHAK,  
Press Sec. No. 23.

#### Local Union No. 30.

Cincinnati, O., October 4, 1898.

Editor Electrical Worker:

I was unable to say much in my September letter to the Worker on account of the G. A. R. encampment held here from September 5th to 8th. The start of the week's pleasure was made by the Labor Organizations of Cincinnati and vicinity on September 5th (Labor Day) and was a grand success. The veterans had their first great camp-fire in Music Hall, starting at 8 P. M. Tuesday, Sept. 6th, 10:30 A. M., parade of naval veterans and military organizations. At 8 P. M. second grand camp-fire in Music Hall. Wednesday Sept. 7th, 9:30 A. M., parade of Grand Army of Republic. At 8 P. M., third grand camp-fire in Music Hall. Sept. 8th, 2 P. M., Grand Cincinnati and Industrial parade, which was a corker; 8:30 P. M., grand display of fireworks on the river. Sept. 9th and 10th the time was taken up by getting the old veterans straightened up so they could go home and get ready to attend the next encampment, which will be held in Philadelphia, Pa., next year.

All the brothers of No. 30 were busy for several weeks before the encampment, and encampment week every body was busy shooting trouble. I know of several brothers who found time to take in all the parades and for myself, I didn't miss any of them, you can bet on that. The railroads claim they brought 125,000 people to Cincinnati that week.

Local No. 30 has lost one of its most reliable members. Thomas Spellisey, our president. The members miss his shining face very much. From what I can understand Bro. Spellisey had some words about his extra pay during the G. A. R. rush, which didn't materialize right. Bro. Spellisey left Cincinnati and went in the direction of Atlanta, Ga., to install a small light plant in that neighborhood. All the brothers of local No. 30 are sorry to see Bro.



Spellisey leave Cincinnati, because he was a good hard worker for No. 30 and made a good president, which position he has held for several terms. He also was a delegate to the Building Trades Council of Cincinnati. The brothers of No. 30 send Bro. Spellisey their best regards and wishes, and hope he will meet with success wherever he may go.

The electrical business is about at a standstill here, but all the brothers of No. 30 are working up to the present time.

Success to No. 12, Greater New York, and hoping that she may prosper and live long.

WM. P. WHEELER,  
Press Secretary.

### Local Union No. 31.

Anaconda, Mont., Sept. 27, 1898.

Editor Electrical Worker:

As Bro. Leonard absolutely refuses to continue in the capacity of Press Secretary any longer, and as I have had the fortune, or misfortune, to be appointed for the unexpired term, I will endeavor to represent our Local in our valuable paper. I am not in a position to do the Local justice at this writing, as I was only enrolled last meeting night, having transferred from Local 65. We have a membership of twenty or more, but for some reason or other it appears to be hard work to get the boys to attend the meetings, but we hope to get them into line in the near future.

As a month of continuous racing just came to a close in our city, the gainers are somewhat shy financially, consequently a little behind with their dues; but our hustling F. S. says they will have to pay up if they have to pawn their meal tickets. Our own Sport McAllister seems to be the only lucky dog (excuse the phrase Sport) to have had the inside track, as he bobbed up serenely last meeting night with all kinds of coin. I touched him for a case myself.

We have one brother sick with typhoid fever, and while he has been a very sick boy, he is now in a fair way to recover. May good luck be with him. As the boys are all hustling, and as there is a good field for us to work on, I hope to be able to report quite a considerable increase in membership in my next letter.

As there is some danger of me getting a short here, I will cut out before I blow a fuse.

Yours fraternally,  
D. H. J.,  
Press Secretary.

### Local Union No. 37.

Hartford, Conn., Oct. 4.

Editor Electrical Worker:

Once more I will endeavor to convey to the brothers of the different locals throughout the country an idea of how things are going in Local No. 37. The most important happening of the month was the an-

nouncement of the approaching marriage of our worthy Inspector M. P. Sullivan. As the brother is going out of town to be married, he prepared a banquet for the members, to which the aforesaid members did justice, on the night of September 28th. Next comes our dance and display. On Nov. 9 we give our annual dance and display. We anticipate a handsome display and a large crowd. We cordially invite all brothers to visit us upon that night.

The 1st Regt., Conn. Volunteers, returned home for a 30-days' furlough on Sept. 22d. They return on Oct. 22d, to be mustered out of the service. While the boys looked thin, they made a far better appearance than when they left town. The general verdict was that the only wise people were those who stayed at home. It pleased us to welcome our Bro. Thomas McGuckin home from the front, and we sincerely hope he will stay.

Well, things are not very lively here, still all members, with very few exceptions, are working. I look forward to this publication of the WORKER in the hope of seeing an answer to my problem of last month. Here is another. Prove that 2 will equal 1. Anyone sufficiently interested may obtain an explanation by writing to me. Well, as we are all busy this month—I myself am working nights—I hope the brothers will excuse this short and badly-written letter.

W. B. MALOY,  
Rec. Sec'y.

### Local Union No. 38.

Cleveland, O., October 9th, 1898.

Editor Electrical Worker:

Local No. 38 is booming; to be plain spoken they are all trying to get in out of the cold. The increase to \$10.00 for initiation has opened their eyes. We had three applicants for initiation last meeting, but only two put in an appearance. We also had five applications, and the writer now holds three more for our next meeting. This is the only way to get them in, for there are always a few you have got to force in, but they will come to the front when you put the jacks to them. If the initiation fee would be raised all along the line, other Locals would be benefited the same. There would be no show for them to go to other places and get in at reduced rates. Lots of times you will catch a party on a job and you will go after his application and he will pay the first part, and stand you off for the second payment, but when pay day comes he will give some excuse or other and tell you he will come in next pay day. But that never comes, because he's hit on the head with a pay check and jumped the town. But while he has been working on the job, he has had all the privileges of a union man.

The Walker Elec. Co. has been absorbed by the Westinghouse Co. of Pittsburg. Well, the Walker Co. was a straight union

shop from start to finish, all branches of work being thoroughly organized. It was one of the most strict union shops in Cleveland. The Pittsburgh end of the combine is non-union (or an open shop.) Perhaps the Local in Pittsburgh will turn around and help get those shop men in or else get them to organize a Local for themselves. We have about 50 members in the Walker Co. shop. Local 80 has about 43 members in the Walker shop, and I will state that no person can start to work in that shop unless they fill out an application blank and send their money along with the blank. The members of Local No. 80 are all hustlers and strictly up-to-date.

Business took a spurt the last few weeks. They are sending to the union for men now. One of our brothers was working on a job 30 miles from town, out at Lorain, and he was sent in to look up some new wiremen. All he could find was three, which he put to work. So when they are doing that, things are coming our way.

We had an unexpected call from Brother Pete Keollacker, who dropped in at our last meeting. Pete has been living in the far west for some time, but looks natural. The boys were glad to see him.

Bro. Chas. Call, Vice-President, passed around the cigars to the boys last meeting. He had the excuse for being absent that he was out of town. Well, Chas. went and surprised the boys by getting married. Local No. 38 wishes you the best of good luck and prosperity.

Well, Mr. Editor, Local No. 38 asked Boston for some information concerning a firm by the name of Lewis, but up to date has not got any answer. They have a large job here and we would like to find out how they stand with the Local in Boston. They are working non-union men. Hope Boston will send No. 38 the desired information.

Yours respectfully,  
GEO. H. GLEASON,  
Press Secretary.

### Local Union No. 40.

St. Joseph, Mo., Oct. 9th, 1898.

Editor Electrical Worker:

The P. S. will send a few pickings for the October Worker, which finds all of the brothers of No. 40 working, with good prospects till snow flies. We are adding new lights to our circuit every meeting, and, as we have a large dynamo capacity, let the good work go on.

Two members of No. 40 met with accidents, Bro. Roberts while working for the Missouri and Kansas Telephone Co., pulling slack in South St. Joe, a rotten cross arm broke, letting him fall and breaking his leg. He is getting along nicely and at this writing was able to go to his home. It will be a month or more before he will be able to walk. Bro. Luce, while working at Platt City, fell from a pole, break-

ing his leg, also bruising himself considerably. Last meeting night he was reported getting along as well as can be expected.

The Postal gang is still in the city doing new work and repairing. It will be a month or more before they shake the dust of this city from their feet. There is an ex-brother working for the Street Railway Co. who, when pressed to pay up back dues, said he would do so as soon as No. 40 restored the sick benefits. Now this same individual on a former occasion, when he fell from a trolley ladder, helped to drain the treasury till the Local had to stop sick benefits, and has received more money than he ever paid into No. 40 and can pay dues a good while before he gets even. Such poor excuses show a want of common sense. Somebody has to pay dues to replace the sick benefits. Or is the ex-brother waiting till we get a large reserve on hand. Then we will probably raise the ante. The electrician at Asylum No. 2, ex-Bro. Snodgrass, who draws a good salary, hasn't invested in the lightning arrester recommended in the September issue of the Worker. We suppose the state pays every month.

"76,"

Press Secretary.

#### Local Union No. 41.

Buffalo, N. Y., Oct. 9, 1898.

Editor Electrical Worker:

We are having a little improvement in business and I am glad to chronicle that all hands are working. Present indications are that this revival will continue for a month or more, but beyond that is guess work. I am sorry to write that Bro. Taylor, electrician of the Snow Pump Works, is at home in the hands of the surgeons, and is in a pitiful condition. While making a recent test of some incandescent lights, one of them exploded, the particles of glass cutting his face and eyes so badly that one of his eyes was extracted to-day. His sufferings have been intense. He has the sympathy of all who know him.

Professional accidents do not come singly. Bro. Milligan, while putting on a porcelain, knocked off a chip, which entered his eye and caused him to remain at home for treatment several days.

Bros. Burgess and Weatherlow have been sent to St. Catharines to work on a contract job, which will keep them under the British flag for the balance of the winter.

Bro. Clark, or "Fatty," as he is familiarly called by the boys, attended our last meeting—the first since opening of navigation—looking hale and hearty. Bro. Clark is electrician of the Northwest S. S. Co., and has under his charge the electrical apparatus of all their steamers. These steamers are monsters, plying between Buffalo and Duluth. Some of them have search-lights as powerful as a man-of-war.

They are floating palaces; and much of their beauty, especially at night, is due to the electrical lighting. Hence Bro. Clark is a busy man both summer and winter, in looking after the plants, making repairs and improvements.

Five new members were added to our roster last month, and four more were examined and passed by a committee last night, and will be initiated at our next meeting. This shows we are on the alert, and it means further—no card, no work.

No. 45 held an open meeting at Council Hall last night, which was addressed by Grand Secretary Sherman of Rochester, of the National Brotherhood of Electrical Workers; Robert J. O'Brien, E. King, Wm. Haley, F. Kiefer, M. F. Murphy, Wm. A. Bruce, and C. E. Taylor, prominent labor leaders of the city. The meeting was held for the purpose of thoroughly organizing the members of the craft of the city. It was a large and enthusiastic gathering of electrical workers. It is expected that as a result of the efforts of complete organization fully 95 per cent. of the electrical linemen of Buffalo will be members of the local union in the near future.

This meeting was one of the most enthusiastic labor meetings ever held in this city, the hall being filled to overflowing. We noticed quite a number of outside linemen in the audience, and hope they will profit by the advice given them by the speakers and join our ranks. We are pleased that 45 made this move. It shows what they can do, and we feel satisfied the movement inaugurated last night is only the beginning of their campaign to leave no field for nonunion electrical workers within our city limits.

Brother Sherman was, as he always is, a most welcome visitor, personally or officially. He left for Niagara Falls to-day, and will endeavor while there to organize a new local in that city. There are quite a few brethren there, and a large number who are willing to join but cannot get to Buffalo. We expect Bro. Sherman will have no difficulty, and hope to soon read in your columns a letter from the new addition to our grand Brotherhood.

Yours fraternally,

W. H. KELLY.

#### Local Union No. 45.

Buffalo, N. Y., Oct. 10, 1898.

Editor Electrical Worker:

Dear Sir—The boys of No. 45 are beginning to get a hustle on them. Being thoroughly imbued with the right Brotherhood spirit, they demonstrated their zeal for and their interest in the work by holding an open meeting, which was addressed by such prominent labor men as Grand Secretary Harry Sherman, Robert J. O'Brien, William Breese and others of our city. The meeting was held for the express pur-

pose of showing the true object of unionism and the benefits derived therefrom.

Bro. Haley briefly rehearsed the history of our Local, showing what good work had been accomplished in the course of its existence. He referred to the death of Bro. M. Dwyer, who while going up a pole caught hold of the brace, which was crossed by an electric light wire. The resulting shock caused him to fall from the pole, death being due to a broken neck. Within twenty-four hours his widow received the benefit from our Local and he was accorded a good burial.

The President sent a committee to investigate and make a report of the circumstances. As soon as sufficient evidence had been procured, a suit was brought against the Electric Light Company and a verdict of \$6000 was given in favor of the widow.

The meeting was a large and enthusiastic one, and it is expected that fully 95 per cent. of the linemen and outside electrical workers of Buffalo and vicinity will become members of the union in the near future.

J. LODGE,

Press Sec'y.

#### Local Union No. 46.

Lowell, Mass., Sept. 28th, 1898.

Editor Electrical Worker:

Whoopla! here we are again! Missed the last two numbers, but will try to make up this time. Been off on a vacation trip. Fine time; in Canada, way up in the backwoods. Wanted to get clear out 'of sight and hearing of everything electrically, and I did it, done it, dude it! There that just expresses it exactly. Played the dude all the time I was gone. In fact, I got so far up in the woods that one man asked me what district I represented in congress. Started out for a walk over the hills one day and met an old farmer whose life had evidently been spent down in between hills so high and valleys so deep that even in summer they never saw the sun until about nine in the morning and where all they ever heard of the outside world came in the shape of garbled stories told around the fire at the crossroads grocery, and if ever a paper blew over the hills it was captured and passed from hand to hand until the whole population had read it; then it was placed on file among other valuable matter at the old school house at the corner. One old farmer had heard of me from some of the neighbors and greeted me with a cheery howdy do! and, upon returning his salutation, exclaimed, "So you're from the States, air ye? An' they do say as how ye air a electrician. Well, well! An' how much do you get a month at that job? Good wages, I suppose. Might I ax yer what kind of stuff it air like, because I hear it is mighty strong drink, an' I hear that a fellow up in Montreal got killed by

the all-fired stuff. I did not enlighten him, as to do so I would have to talk for some time and I preferred to listen to his quaint remarks and make notes for future use in the Worker, but as I have considerable matter to send this time I will cut it short with the serial chestnut—to be continued.

Well, electrical work is not rushing here; we have some buildings to work on this fall, but they seem to be getting along slowly. Linework is practically at a standstill. L. Elect. Light Co. is working only three men; M. E. Tel. and Tel. is still changing to its underground circuit. They also worked their men Labor Day, which shows how little they care for organized labor.

The motor men and conductors are on strike at Haverhill, Mass. The Lowell Street R. R. Co., let twenty-five of its spare men go and told them they would get them work in Haverhill. That is the kind of companies we have to put up with here but, brothers, all we want is a long pull and a strong pull. Now, brothers, come up to our meetings. Don't stop away because you are a little shy. Our room is for all electrical workers and we give you the glad hand every time you come. Most all of the boys seem to think they've got to send in or come in and pay up and then we don't see them for two or three months, but that don't make a quorum. As I am not a professional at slinging the quill, the brothers must excuse me if I am not heard from at times. We hear good news from our brothers at Porto Rico. I can see a local there if they remain there long. Ask Bro. Whitney how's the family and he will say O. K. He is learning to rock the cradle and read at the same time; young master Whitney disturbs his sleep also. Our T. L. C. had a grand parade Labor Day in which over two thousand union men took part.

There had been no labor procession for three or four years, and there was some interest in seeing how many men would parade.

The showing made was certainly very creditable, and what was even more pleasing was the fine personal appearance of the individual men in line, and the wholesome, manly tone of the mottoes carried.

It was the greatest Labor Day demonstration seen in Lowell in many years. Shortly after 9 o'clock in the morning the men who have made Lowell famous as a manufacturing center began to assemble in the various streets assigned to them for formation. Upon every face was the stamp of industry and later on, as they marched with a firm, even tread through the principal streets with thousands of spectators on either side, one could not help being impressed with the possibilities of perfectly organized labor.

The men presented a strikingly neat ap-

pearance. One or two of the organizations turned out in their working clothes, an idea which proved a very pleasing feature of the parade. The line was scheduled to move at 9:30, but the tardy arrival of two or three unions caused a delay of nearly half an hour and it was about 10 o'clock when the word to march was given.

The formation was as follows:

Platoon of Police in command of Lieutenant Webster.

Chief Marshal, John J. Mahoney.

Chief of Staff, Alexander Gray.

Aids.—F. J. Maguire and J. T. Collins of the Carders and Pickers' union; George Orris, Shavers' union; Michael Connelly, Stationary firemen; Mitchell Morrow, Leather Workers' union; Wilfred Vezina and William Buckley, Loomfixers' union; P. H. McNulty, Woolen Spinners' union; William Golden, Mule Spinners' union; James Noonan, Tailors' union; Charles Burns, Barbers' union; James Connelly, Boiler Makers' union; T. W. Mulligan, Cigar Makers' union; James Coughlin, Plasterers' union; P. H. McHugh, Typographical union; August Borp, Brewery workers; James T. Convery, Theatrical Employees' alliance.

Lowell Military Band, 25 pieces, James A. Murphy, Leader.

Trades and Labor Council, Andrew Shannon, President.

Electrical Workers.

Machinists.

Plasterers.

Lathers.

Stationary Firemen.

Bakers.

Barbers.

Borjes' Band, 20 Pieces.

Theatrical Employees.

Building Laborers.

Cigar Makers.

Bricklayers.

Boot and Shoe Workers.

Lowell Cadet Band, 20 pieces, John Hanlon, Leader.

## SECOND DIVISION.

Textile Workers.

Cotton Spinners.

Woolen Spinners.

National Band, 20 Pieces, R. A. Griffiths, Leader.

Loomfixers.

Carders and Pickers.

Brussell Weavers.

## THIRD DIVISION.

Miscellaneous.

Bamber's Flute and Drum Corps.

Boiler Makers.

Tailors.

Plumbers.

Shavers.

Leather Workers.

The day, though warm, was not as bad as its predecessor. It opened with a cloudy sky which made things look rather dubious for a time. But the clouds gathered no strength and the only obstacle to the complete enjoyment of the celebration was the depressing torridity of the atmosphere. This did not phase the hardy sons of toil,

however, as was indicated in their appearance as they passed through the streets.

Many unique banners were seen in the various unions, among them being: "Our aim is noble, it is to help our unfortunate brothers."

"High wages is high civilization."

"Long live the employer who loves his employees."

"We freed Cuba, now free America."

"God loves the man who helps his neighbor."

"Eight hours' work, eight hours' pay, all municipal work done by the day."

Several unique wagons appeared in the parade. Two were arranged by the Boot and Tremont & Suffolk mill employees and were representations of weavers at work. A third was engineered by employees of White Brothers, with John Whelan in charge. On it was the inscription "Local lodge, No. 7061." Among the hides displayed were glove calf, box calf, and tan box.

I will cut her off here wishing success to our two new locals.

J. BARRETT.

Press Sec.

## Local Union No. 49.

Chicago, Ills., Sept. 13, 1898.

Editor Electrical Worker:

Brothers—our first communication to the Electrical Worker.

The arc lamp trimmers of the city of Chicago street lighting system have been organized and the following officers have been elected:

President—F. J. Strubbe.

Vice-President—Thos. McCaffery.

Financial Secretary—C. Fowler.

Recording Secretary—W. J. Dempsey.

Treasurer—E. Hixson.

Press Secretary—Arthur Frantz.

Inspectors—W. Watson, Arthur Frantz.

Foreman—D. Fleming.

Trustees—J. Kenney, H. Martin, Wm. H. Riley.

Our meetings at present are held at Curtis' hall, Congress and Halsted. Our membership at present consists of twenty members.

The city of Chicago is increasing their lighting system. They expect to have about two thousand more lights in operation this year and we will make every effort to see that the work is all done by union men, and we will make every effort to secure all outside trimmers in the union. We have a large field to work and we hope we will be successful.

All brothers of Local No. 49 kindly extend their thanks to our Grand Pres., J. H. Maloney, also to brothers of Local No. 9 for their kind assistance to us. I remain,

Respectfully yours,

ARTHUR FRANTZ,

Press Secretary.

**Local Union No. 55.**

Des Moines, Ia., Sept. 9, 1898.

Editor Electrical Worker:

Our worthy Secretary having departed for the east, it has devolved upon less experienced members to portray to our worthy brothers the most successful Labor Day celebration in the annals of our grand Hawkeye State.

At 10:30 a. m. we started from Trades and Labor hall, 7th and Locust streets, fifteen hundred strong, with three bands, seventeen Local banners and flags galore. The record made, and general appearance of the boys of Fifty-five, was one which we all can look back upon with pride. Brother Wm. Callerman led our organization with the nicest silk banner that was flying to the winds in the whole parade; next came Brother Bob McCarty with a trolley pole, from which was run a wire connecting the trolley with a cluster of fine red, white and blue lights neatly arranged upon the top of an umbrella carried by Brother Snyder, and followed by Brother Readman with ground wire attached to cane that he slid along the rail. Upon the top-most light was a large globe, encircled by N. B. E. W., in all making a very pretty and attractive display.

After the parade, began the grand rush for the picnic grounds, which was held in Greenwood Park. It looked as though the town had gone wild. Those of you who have seen a fire or dog fight in a big city can form some idea of the time we had getting out there. Street cars, bicycles, buggies and on foot, any way to get there. The crowd was estimated at about six thousand.

The afternoon exercises were opened by Mr. A. L. Urick, president of the day, who introduced S. A. Foster, who delivered a very able discourse on the labor question, except it was too long. The next speakers were O. M. Bromley, State Labor Commissioner, W. E. O. Blennis and Samuel Strass, who each gave short and very appropriate talks for the occasion. Then came base ball, races and games too numerous to mention. When it came to the pole climbing contest, linemen had a clear field and no favorites. Everything was coming easy until Brother Bromwell lead away, climbing forty feet in the clear, ringing a bell from push button on the top in 14 seconds, with Brother Ed. Purcell a close second in 14½ seconds. Then the stuff was all off. All climbing was done with one foot in pole. It then began to rain, but as 55 promised a team in the tug of war contest, which was composed of miners, painters, carpenters and electrical workers, and as there was two boxes of cigars for the winning team, we went after them like a lineman after a good boarding house, after a hard day's wire stringing on the road. Our team was composed of

Brothers Callerman, Bowintree, Swisher, Thrailkill and Fitzgerald. We first took the miners over the line, then the carpenters made short work of the painters. We then toed the mark with the carpenters, to see who would smoke and who would eat apples. After a good hard pull, the carpenters concluded apples were good enough for them. Someone said if we just had this rope on some of our kickers who are unable to see what good a union is to them, we might be able to pull them up to the union for a few nights until they get used to the noise. We are going to make the pull of our lives to make this a union town.

Work here at present is just about equal to the demand. All the boys are working and no company wanting men. I must close, as this is most too long for a starter.

J. FITZGERALD,

Member Local 55.

**Local Union No. 56.**

Erie, Pa., Oct. 3, 1898.

Editor Electrical Worker:

I am sure you will be pleased to hear from me again. We are getting along very nicely here, although all the brothers have their troubles. In fact, nearly every man in Erie is chasing trouble. I have not had much trouble lately, as I keep my line in good shape and don't expect much bother until the good cold winter days come, and then I will go to the horse restaurant and get a vehicle and go out in the country and freeze with the rest of the farmers. The most of my trouble at present is going to the market, as my wife allows me to do some of the buying for the table. I was just out getting prices for to-morrow, and butter is strong and liable to hold its own; yeast cakes are rising steadily; bananas are slipping along at the old price with an occasional drop; water-melons are going down more than they were a week ago; cheese is more lively and stirring; syrups are sticking up at the prices and are about a pint more to the quart than they were last winter; green apples are gnawing less since vacation; dried apples are swelling the markets and chickens are picking up a little; summer squashes are crooks, but the potatoes have their eyes on them; horseradish and red peppers are right smart. I just went out for a pint of milk and met Bro. Carver, and the milk cost fifty cents; so my troubles ain't all over yet.

Bro. Geives is getting along fine with his broken arm, but he will not be able to go to work for some time yet. We have another brother who is sick, but as he has let his card mildew, he will miss his five per.

Bro. Schwimmer is still working in Girard, Pa. He has put in a very neat little exchange there for the Mutual Phone Co., but as their right of way trouble is not

settled yet, they are not connected with Erie.

Bros. Kistner and Miller have returned from Girard and I am told that the Mutual is going to string considerable cable this fall. Mr. Amy, an inspector for the Mutual Phone Co., has gotten up a patent on a window sash. It is an arrangement to connect the window sash into the frame so it can be disconnected with a key and the window can be taken out to be washed or repaired, and replaced again by anyone, and it appears that Mr. Amy has a good thing and will not have to work for a Phone Co. long.

Bros. Hart, Donahue and Hick, who were working for the Bell Phone Co., were laid off last week. Bro. Hart has gone to Warren, Pa., where he caught on through the kindness of Bro. Spencer, of No. 63. Bro. Hart is working for the Warren Electric Light Co., and he says he likes the place. Bro. Hart has the best wishes of the brothers of No. 56.

The work in Erie is not very plentiful at present, but I think matters will change a little soon and there will be work for all the brothers this winter.

We have a few brothers who have forgotten that we have a Fin. Sec.; and they don't think to remember where we meet. They have been reminded of this fact, but they are always too busy, or some other kind of a lineman's excuse, but I think it won't be long before they will be looking for a chance to come in out of the cold. It reminds me of hearing a brother say "Don't carry your head too high, fame is a vapor, and good jobs take wings and fly away." The time may come when you will cherish that fraternal feeling. Or in other words, you may say, "I see a saw;" or "I saw a sea," and still have nothing to do with a see-saw.

A letter carrier gave Bro. Mulheim a letter the other morning and said "here is a letter for you from the dead letter office." And John said, "I expected this, my brother has been ailing for some time."

Yours as B 4,

SPEEDER,

R. S.

**Local Union No. 60.**

San Antonio, Tex.

Editor Electrical Worker:

The question of poor insulation in the wiring of business blocks, for incandescent lighting, is receiving considerable attention at the hands of those whose business is now suffering from past indifference in this regard. If a building is improperly wired and fire is the result, the system of lighting receives all the condemnation, and the man who furnishes the worthless wire is never once thought of. In addition to this, the insurance officials get their heads together and the premiums are raised on all buildings using the system

which they suppose is at fault. To avoid these expensive annoyances in the future, each electric light company which is awarded the contract to furnish buildings with light, should see to it, by thorough inspection, that the wire work is properly done. Their future reputation depends upon this. At the same time it will be well to see that owners of buildings are duly cautioned against the cheap wiring of their buildings.

A majority of the contracts for wiring buildings have been given to the lowest bidders, as is customary, but through ignorance. Light on this important subject would have guided the builder in placing the contract with responsible firms, which could be relied upon to fulfill all the requirements of good workmanship.

"NEW TIMER."

### Local Union No. 60, San Antonio, Texas.

Kenville, Tex., Oct. 2, 1898.

Editor Electrical Worker:

You will have to excuse a short letter this time, as your honorable servant and brother, "Chub" Talcott are in Kenville, Tex., putting up a small telephone exchange. It will take us about four weeks to do the construction work and we will use a 100 drop Keystone board.

Bro. Talcott rode an old farm horse fifteen miles to the county fair, held at Center Point, yesterday, and when he returned I had to lift him off his horse and carry him to his room. On examination I found him in a critical condition; he will have to use about fifteen boxes of vaseline before he can expect to double arm any more of these 35-foot poles. No more county fairs for "Chub."

Bro. James Morrissey was in town this week and paid up a year's dues in advance. The financial secretary hopes that some of the slow boys will catch the same disease.

Bro. McNemar, inspector for the S. W. Telephone Co., was seriously burned with 200 volts last week, while clearing up a grounded guy wire.

We gaze around the lodge room every meeting night in hopes of seeing Bros. Ernst and Martin's faces, but are always disappointed.

"Chub" bet a whole quarter on a horse race at the fair yesterday.

What do you think? "Hay-wire" Jackson actually receives union wages now, and has the unlimited gall to put in an application for membership after scabbing here for years. He will surely be elected; "nit."

No. 60 would like to hear from Bro. Hendricks.

It is so warm here that I can't write, so I will close and take a stroll down by the river.

F. W.  
Press Sec'y.

### Local Union No. 69.

Dallas, Texas, Oct. 3, 1898.

Editor Electrical Worker:

Sixty-nine is working along at the same old gait. We have some peculiar union men here; it may be that they do not know any better, but if they will attend the meetings we will try and help them out as much as we can. They seem to want to do a good deal for visitors who are not union men, never were and never will be until they are forced in. When a man tells me that he can not find a man in a town the size of Dallas, I do not think it would be safe for him to go to a city, for he could not find his way home. There is one man here who has been loafing for a week but he cannot be found in this big place of 45,000 people. Gee! but this is getting to be a big place, when you have got his address, and he is on the street every day and the business part of the town is nine blocks one way and two the other. There is too much policy unionism. When they want a job they know where the meeting place is and when they meet, but as soon as they get a job they forget all about it until the next day. What did you do last night, I forgot all about it until so and so asked me if I went? I say a man who will give a man a job that has the reputation of working in more places than any other lineman in Texas and does not belong to a union, is not much of a union man himself, as a man who travels that much has been to places where there were locals. The same man was in here a short time ago and worked a week, and got his money. What did he do? Send in his application? No; he went down and made application for \$15.00 worth Tempts Extra Pale and that is the kind of a man they put to work. I say a man that has an opportunity to join a union and don't do it, give him no more show than you would a scab, for he is at par with them. I would say for the benefit of non-attending members that we are still meeting at the same old place, second and fourth Wednesdays.

W. B. COURTNEY,  
Press Secretary.

### Local Union No. 72.

Waco, Tex., Oct. 5, 1898.

Editor Electrical Worker:

As it is rather damp to-night and no chance to get anywhere, I will try and write a few lines. We are in the midst of the largest strike that has ever taken place in Waco. It is a demand of the motormen for a reduction in hours from 12 to 9. They have been working 12 hours per day at \$1.50. They asked for nine hours per day at the same price. The Superintendent referred it to President Scott, of St. Louis. He replied that he could not think of such a thing; that the lines were not paying as they were. By examining their books for the last 15 days, the cars alone had cleared

over six hundred dollars. The boys went out yesterday morning and there has not been a car out of the barn up till to-night. Had a mass meeting last night; large crowd and some fine speeches. Everything goes as smooth as could be; no misconduct of any kind. Everybody in town is in hearty sympathy with the boys. They had a committee of motormen and citizens in council when I left; hope it will be settled by morning. The boys went out to a man. Mr. Steward, of the Street Car Co., has been in Dallas and Fort Worth yesterday and to-day, trying to get men. He talked one into coming from Dallas; the boys met him at the train, took him to their boarding house and told him he had a place to board as long as he wanted to stay in town. By morning they had a pretty good union man out of him, so when the Superintendent called him he told him it would be impossible for him to go to work, so the boys bought him a ticket and started him back for Dallas. He surely did not know the size guns the unions carry in Waco; they are all 13-inch rapid fire. So, Mr. Scab, it is a good, healthy idea, to give Waco a wide berth.

Well, boys, line work is a little short just now, and don't know about the future; have some new building for the Telephone Co., but no orders to build it yet. A new light company applied for a franchise last night.

Oct. 7.—Well, boys, the motormen are still out, and not a car has left the shed, and no prospects. They have fired every man working for them, but took most of them back. The boys all say they will stick, and the company won't give in, so that is the way it stands. The people are certainly with the boys.

Well, I must close, and see if I can sidetrack a scab. E. P. McBROOM.

The Flagstaff, Ariz., Mutual Telephone Company, has been incorporated by J. Clark, A. T. Cornish, T. E. Pollock, and others, to construct and operate telephone and other electric wires in Coconino County, Arizona. The capital stock is \$5,000.

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## From "Old Crip."

Raton, N. M., Oct. 5, 1898.

Editor Electrical Worker:

Another month has passed and it is time to write the "Dear Old WORKER." I am glad to report "Old Crip" still among the living. It is certainly very gratifying to learn that we have a local in Greater New York. Long may she live! I haven't much news to write from these parts; I haven't met but one "floater" in the three months I have lived here, and that was Bro. Duncan Pearce, formerly of Local 19, Chicago. He is working three miles from here at a small mining town, and visits me quite often.

I am glad to say that some more of the locals have been buying my books, and I am sorry that I have nothing of more value to offer them than my little almanacs, but they will always have my gratitude. Since my last formal report, in the June WORKER, the following locals have sent me help for books mailed to them: The very first item on the slate was a five-dollar bill from Local No. 8; the next consignment to arrive was another five-dollar bill from Local 55; next came three dollars from Springfield, Ill. I can never forget Local 70's boys. The next was a five from Local 67. I hope those brothers will all get to Heaven. My melancholy changed to a joyous laugh when Local 71 sent me six and a-half. The next to drop into the line was \$2.75 from Local 69; then came Frank Campbell, kind, calm and serene, with another \$5 from local 17; then came a letter from Local No. 10, and \$2.75 was what they sent in. Now comes George Gleason, representing 38, and another \$5 goes down on the slate. Now, George, the \$5 that you sent just paid one-half of a month's house rent.

Who would have thought it. Breese, "you ain't the only poet on the Beach." Is he—Beach? I'll leave it for Beach to decide. (This is a bit of humor that I thought up myself.)

Well, I will close for this time, as I have already blown the limit.

What's wrong with the P. S. of L. U. 22? I heard about Stedman; accept my hearty congratulations, "Sted." "Brink," I received that battery O. K; will write to you soon. Love and best wishes to you and Delia.

With best wishes for the B.,

I am, fraternally,

ROBERT G. WRIGHT.

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A \$3.00 Cork Sole Shoe for \$2.00. SEND US \$2, state size and width and we will send you these shoes by express, and if you don't find them equal to any \$3.00 Cork Sole Shoe made we will refund your money. This shoe is made from Genuine Badger Calfskin over the latest style coin toe last, soles cut from best oak sole leather. Genuine Mander Cork damp-proof double upper soles. Genuine

Douglas top. Sizes, 5 to 12; medium, wide or extra wide. Such value never was offered before. Write for free shoe catalogue for everything in foot-wear at wholesale prices. Address, SEARS, ROEBUCK & CO. (Inc.) Chicago, Ill. (Sears, Roebuck & Co. are thoroughly reliable.—Editor.)



## EXTENSIONS AND IMPROVEMENTS.

The new telephone line from the California mine to Graniteville, Cal., will be built soon. The distance is about four miles.

An agent of the telephone company at Gilroy, Cal., has been soliciting subscribers for a telephone line from Gilroy to San Felipe.

Superintendent Keyser, of the telephone company at Covina, Cal., is considering the proposition to put in a line to Irwindale and one towards Glendora.

An ordinance granting J. M. and B. Stephens a franchise to build a telephone line from Murphy's to Sheep Ranch was passed by the supervisors at San Andreas, Cal., on September 23d.

SEND US ONE DOLLAR and this ad. and we will send you this high grade 1898 model stove by freight C.O.D., subject to examination. Examine it at your freight depot and if found perfectly satisfactory and the greatest stove bargain you ever saw or heard of, pay the freight agent in full our SPECIAL PRICE, \$13.00 less the \$1.00 sent with order, or \$12.00 and freight charges. This stove is size No. 8, oven is 16 1/2 x 18 x 11, top is 12 x 23, made from best pig iron, extra large flues, heavy covers, heavy linings and grates, large oven shelf, heavy tin-lined oven door, handsome nickel-plated ornamental trimmings, extra large deep genuine Standish portable lined reservoir, handsome large ornamental base, best coal burner made, and we furnish FREE an extra wood grate, making it a perfect wood burner. WE ASSURE A BIRD-ING GUARANTEE with every stove and guarantee safe delivery to your railroad station. Your local dealer would charge you \$25.00 for such a stove; the freight is only about \$1.00 for each 50 miles, so we save you at least \$10. Address, SEARS, ROEBUCK & CO. (Inc.), CHICAGO, Ill. (Sears, Roebuck & Co. are thoroughly reliable.—Editor.)



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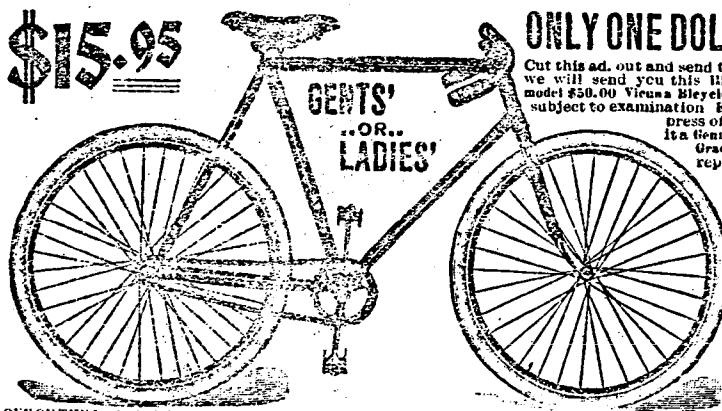
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## Directory of Unions.

Secretaries will please furnish the necessary information to make this directory complete. Note that the time and place of meeting, the name of the President, the names and addresses of the Recording and Financial Secretaries are required.

**No. 1, St. Louis, Mo.**—Meets every Monday at 601 Market st. Pres., S. M. Keeble, 2618 Rutger st.; st.; R. S., W. J. Squires, 2616 Washington av.; F. S., P. C. Fish, 1927 N. 15th st.

**No. 2, Milwaukee, Wis.**—Meets every Friday at 298 Fourth st. Pres., Joe Harris; F. S., J. H. White.

**No. 3, St. Louis, Mo.**—Meets every Saturday at Lightstone's Hall, 11th and Franklin av. Pres., A. P. Blackford, 13th and Market, care Garfield House; R. S., James McAfee, 20th and Market, care Hotel Comfort; F. S., G. A. Mitchell, 13th and Market, care Garfield House.

**No. 4, New Orleans, La.**—Meets 1st and 3d Tuesdays at Caroudelet and Perdido sts. Pres., J. McGregory, 2111 Rouseau st.; R. S., C. M. Hale, 630 St. Mary st.; F. S., R. L. Joyce, 331 S. Bassin st.

**No. 5, Pittsburg, Pa.**—Meets every Friday night in Schermer Bldg., cor. Water and Market sts. Pres., Geo. M. Rudolph, 154 Herron ave., Pittsburg, Pa.; R. S., Frank Lunney, 301 Robinson st., Allegheny, Pa.; F. S., N. H. Bream, 108 Herron av., Pittsburg, Pa.

**No. 6, San Francisco, Cal.**—Meets 2d and 4th Wednesdays at Foresters' Hall, 20 Eddy st. Pres., Wm. Barston, 214 Union st.; R. S., A. A. Whitfield, 632 Natoma st.; F. S., R. P. Gale, 1008 Hyde st.

**No. 7, Springfield, Mass.**—Meets every Wednesday at room 14 Barnes Bldg. Pres., G. T. McGillivray, 30 Besse Pl.; R. S., T. J. Lynch, 103 Sheridan st.; F. S., M. Farrell, 59 Broad st.

**No. 8, Toledo, O.**—Meets every Monday at Friendship Hall. Pres., C. W. Schausten, 1846 Ontario st.; R. S., W. H. Kessler, 701 South st.; F. S., F. M. Gensbecher, 713 Colburn st.

**No. 9, Chicago, Ill.**—Meets every Saturday at 106 E. Randolph st. Pres., W. A. Jackson, 197 S. Jefferson st.; R. S., C. D. Hatt, 5815 Union av.; F. S., J. Driscoll, 77 Fuller st.

**No. 10, Indianapolis, Ind.**—Meets 1st and 3d Mondays at 29½ W. Pearl st. Pres., John Berry, care hqrs. Fire Dept.; R. S., E. T. Busselle, care N. Tel. Co.; F. S., E. C. Hartung, rooms 5 Cyclo-rama Bldg.

**No. 12, Greater New York.**—Pres., James B. A. McEvoy, 310 E. 37th st., New York; R. S., Edward L. Miller, 43 W. 114th st., New York; F. S., Frank B. Smith, 61½ Lynch st., Brooklyn.

**No. 17, Detroit, Mich.**—Meets every Tuesday night at No. 9 Cadillac sq. Pres., R. Scallan, 90 Porter st.; R. S., Frank Campbell, 130 Debois st.; F. S., P. Andrich, 985 Van Dyke av.

**No. 18, Kansas City, Mo.**—Meets every Friday night, Labor hqrs., 1117 Walnut st. Pres., F. Holm, 702 Del. st.; K. C., Kan.; R. S., F. J. Schadel, 612 Wall st.; K. C., Mo.; F. S., W. L. Hutchinson, 1605 Harrison st.; K. C., Mo.

**No. 19, Chicago, Ill.**—Meets 1st and 3d Tuesdays at 6512 Cottage Grove av. Pres., M. J. Sullivan, 5555 Shields av.; R. S., F. Conklin, 10717 Michigan av.; F. S., J. J. Hafner, 2539 117th st.

**No. 22, Omaha, Neb.**—Meets every 1st and 3d Wednesdays at Labor Temple, 17th & Douglas sts. Pres., J. S. Tobias, 2023 S. 18th st.; R. S., J. C. Schneider, 1706 S. 17th st.; F. S., P. L. Myers, 711 N. 16th st.

**No. 23, St. Paul, Minn.**—Pres., J. H. Roadhouse, 150 Sherburne av.; F. S., A. H. Garrett, 201 W. C. st., St. Paul, Minn.

**No. 24, Minneapolis, Minn.**—Pres., O. R. Shortall; R. S., W. I. Heywood, 16 E. 26th st.; F. S., J. L. Wolfe, 124 Fourth st.

**No. 25, Duluth, Minn.**—Meets 2d and 4th Thursdays at room 6, Banning Bldg. Pres., R. Thayer, 24 Third av.; R. S., L. P. Runkle, 17 Norris blk.; F. S., Jas. F. Owens, 414 E. First st.

**No. 26, Washington, D. C.**—Meets every Saturday at 628 Louisiana av. Pres., P. H. Wissenger, 508 E. st., N. W.; R. S., J. C. O'Connell, 930 E. st., N. W.; F. S., G. A. Malone, 48 L. st., N. W.

**No. 27, Baltimore, Md.**—Meets every Monday at Hall cor. Fayette and Park avs. Pres., D. J. Hunnette, 1019 Fairmount av.; R. S., J. P. Jones, 1600 Lorman st.; F. S., P. H. Russell, 1408 Asquith street.

**No. 30, Cincinnati, O.**—Meets 1st and 3d Mondays at 136 E. Court st. Pres., Thos. Spellacy, 425 W. 4th st.; R. S., John F. Harbuth, 2158 Vernon st.; F. S., Geo. K. Hilderbrand, Burlington House, 3d and Broadway.

**No. 31, Anaconda, Mont.**—Pres., W. J. Leonard, care Elect. Light Co.; F. S., H. Jorgens, 612 Pine st.

**No. 32, Burlington, Ia.**—Pres., G. M. Cunningham, 351 and 353 Front st.; R. S., Hugh Ward, 1006 Spruce st.; F. S., Al. Fox, 637 S. Fifth st.

**No. 35, Boston, Mass.**—Meets every Wednesday at 49 Bennett st. Pres., M. Burningham, 284 N. Beacon st., Brighton; R. S., J. F. Phelps, 75 Waldeck st., Dor.; F. S., W. C. Woodward, 10 Church st.

**No. 36, Sacramento, Cal.**—Meets 1st and 3d Tuesdays at Foresters' Hall. Pres., J. S. Marsh, 600 7th st.; R. S., O. Buckins, 1415 D st.; F. S., R. A. Pisk, 804 K st.

**No. 37, Hartford, Conn.**—Meets every Wednesday at 603 Main st. Pres., F. H. Roberts, 87 High st.; R. S., W. B. Maloy, 68 Retreat av.; F. S., John J. Tracy, 58 Temple st.

**No. 38, Cleveland, O.**—Meets every Wednesday night at 356 Ontario st. Pres., Geo. H. Gleason, 110 Maple st.; R. S., C. J. Minch, 16 Salzer st.; F. S., A. Herron, 4 Wallace st.

**No. 40, St. Joseph, Mo.**—Meets every Thursday night at Brokaw Hall, 5th and Locust sts. Pres., Frank P. St. Clair, R'y Co.; R. S., Wm. T. Dorsel, R'y Co.; F. S., J. C. Schneider, City Elec. St. Co.

**No. 41, Buffalo, N. Y.**—Meets every Wednesday at Council Hall. Pres., W. G. Ferguson, 89 Red Jacket st.; R. S., H. A. Wende, 2256 Bailey av.; F. S., H. M. Scott, 363 Morgan st.

**No. 42, Utica, N. Y.**—Pres. Phil. Gabler, 654 Bleeker st.; R. S., W. F. Carter, 68 Neilson st.; F. S., F. J. Murphy, 272 Third av.

**No. 43, Syracuse, N. Y.**—Meets 1st and 3d Tuesdays at McCarthy's Hall, Market st., opp. City Hall. Pres., A. Donovan, 310 Niagara st.; R. S., F. N. Stiles, 734 E. R. S.; F. S., Wm. H. Gough, 108 Hawthorne st.

**No. 44, Rochester, N. Y.**—Meets 2d and 4th Wednesdays at Odd Fellows' Hall, State st. Pres., John Kenaley, 80 Frank st.; R. S., John Wolf, 9 Cedar st.; F. S., Fred Martin, 50 Champlain st.

**No. 45, Buffalo, N. Y.**—Meets 1st and 3d Saturdays at Council Hall. Pres., John Marion, care W. U. T. Co.; R. S., John Daly; F. S., M. E. Stables, 46 Kail st.

**No. 46, Lowell, Mass.**—Meets every Thursday at 202 Merrimack st., 3d floor, room 5. Pres., Lester G. Hall, P. O. Box 292; R. S., H. L. Whitney, 6 Puffer av.; F. S., R. V. Cole, 169 Mt. Hope st., Pawtucketville, Mass.

**No. 47, Worcester, Mass.**—Meets every Wednesday evening at 306 Main st. Pres., S. A. Stout, 130 Austin st.; R. S., V. V. Reed, 61 Myrtle st.; F. S., Chas. C. Coghlin, 113 West st.

**No. 48, Decatur, Ill.**—Meets at Cigarmakers' Hall, E. Main st. Pres., J. B. Mullenix, 611 Spring st.; F. S., P. E. Aldrich, 115 Wood st.

**No. 49, Chicago, Ill.**—Pres., F. J. Struble; F. S., Chas. E. Fowler, 219 W. Congress st.

**No. 52, Davenport, Ia.**—Meets 1st and 3d Tuesdays. Pres., A. L. Wheeler, Atlantic Hotel; R. S., J. H. Clarke, 215 Iowa st.

**No. 53, Harrisburg, Pa.**—Pres., C. A. Swager, 115½ Market st.; R. S., Jas. Emininger, 25 N. 15th st.; F. S., C. Anderson, 46 Summit st.

**No. 55, Des Moines, Ia.**—Meets every Thursday night at Trades Assembly Hall. Pres., J. Fitzgerald, 1924 Siner st.; R. S., C. C. Ford, 715 Scott st.; F. S., M. O. Tracey, 212 Raccoon st.

**No. 56, Erie, Pa.**—Meets 1st and 3d Wednesdays. Pres., John Disbrow, 1916 Sasafra st.; R. S., L. E. Carson, 303 French st.; F. S., H. M. Kistner, 7 E. 7th st.

**No. 57, Salt Lake City, Utah**—Sec'y, R. Blair, care Citizens' E. L. Co.

**No. 60, San Antonio, Tex.**—Meets 1st and 3d Saturdays at 8 p. m. in Painters' Hall, 131 Soldad st. Pres., Roy S. Cushman, 409 Wyoming st.; R. S., W. P. Anderson, 414 6th st.; F. S., M. E. McElroy, 1725 W. Commerce st.

**No. 61, Los Angeles, Cal.**—Pres., Geo. F. Dornier, 127 W. 1st st.; R. S., W. A. Woodis, Box 84 Station B; F. S., S. L. Brose, 432 Colyton st.

**No. 62, Kalamazoo, Mich.**—Pres., Leon Bellman, 1102 Porter st.; R. S., Wm. Thacker, 1233 Portage st.; F. S., L. Burnett, 116 N. Church st.

**No. 63, Warren, Pa.**—Meets 1st and 3d Wednesdays at D. O. H. Hall, cor. 2d and Liberty sts. Pres., F. W. Terry, 414 Laurel st.; R. S., W. A. Pulliam, Exchange Hotel.

**No. 65, Butte, Mont.**—Meets 2d and 4th Wednesdays in Good Templars' Hall. Pres., R. A. Cherry, Care Mont. E. Co.; R. S., W. C. Medhurst, P. O. Box 846; E. M. DeMers, P. O. Box 846.

**No. 66, Houston, Tex.**—Meets 1st and 3d Mondays. Pres., R. A. Tripp; R. S., W. P. Johnson, Telephone Office; F. S., G. O. Wood, 1203 Capitol avenue.

**No. 67, Quincy, Ill.**—Meets 2d and 4th Wednesdays at Trades Assembly Hall, S. 8th st. Pres., W. F. Wagner, 551 Locust st.; L. O. Coustan, 401 S. 9th st.; C. H. McMeece, 511 S. 7th st.

**No. 68, Denver, Col.**—Meets Monday nights. Pres., Chas. Sallstrom, 1051 Ogden st.; R. S., C. W. Armstrong, 2455 Lincoln av.; F. S., H. F. Clark, 804 14th st.

**No. 69, Dallas, Tex.**—Meets every Tuesday evening at Labor Hall. Pres., W. B. Courtney, Dallas, Tex.; R. S., C. E. Barton; F. S., P. F. Barnes, Commerce, Prather st.

**No. 70, Springfield, Ill.**—Meets 1st and 3d Thursdays, Carpenters' Hall, S. 4th st. Pres., Fred Miller, Staley Hotel; R. S., Chas. Danilson, 1118 E. Jackson st.; F. S., S. Phillips, 842 N. 3d st.

**No. 71, Galveston, Tex.**—Meets 2d and 4th Thursdays, Cooks and Waiters' Hall, 23d st. between Market and Mechanic. Pres., J. F. Payne, 1528 22d st.; R. S., D. L. Goble, 3320 R. ½ st.; F. S., D. K. Garrett, 1204 39th st.

**No. 72, Waco, Tex.**—Meets 2d and 4th Wednesdays at Labor Hall. Pres., E. P. McBroom, S. W. Tel. Ex.; R. S., G. R. Lockhart, 931 S. 6th st.; F. S., Joseph H. dges, 728 S. 6th st.

**No. 73, Spokane, Wash.**—Meets 1st and 3d Wednesdays in K. of P. Hall, 816 Riverside av. Pres., Eli Hensley, 218 Riverside av.; R. S., G. Pagel, P. O. Box 635; F. S., C. C. Van Inwegen, P. O. Box 635.

**No. 74, Winona, Minn.**—R. S., Harry P. Telegate, 611 Wilson st.; F. S., Joseph Trautner, 620 E. 3rd st.

**No. 75, Grand Rapids, Mich.**—Meets 1st and 3d Sundays. Pres., A. D. McLellan, 29 E. Bridge st.; R. S., C. Burns, care Citizens' Tel. Co.; F. S., C. E. Post, 167 St. Clair st.

**No. 76, Tacoma, Wash.**—Pres., Wm. Kane, 1135 D st.; R. S., W. J. Love, 113 10th st.; F. S., Jas. Murray, 1118 D st.

**No. 77, Seattle, Wash.**—Pres., J. J. Maitland, 231 Pontius av.; R. S., C. H. Randall, 815 2d av.; G. C. Jenkins, 1319 14th av.

**No. 78, Saginaw, Mich.**—Pres., Jas. Hodgins, 303 N. Franklin st.; R. S., John Strachan, 316 N. 2d st.; F. S., Chas. Ross, P. O. Box 225 E. S.

**No. 80, Cleveland, O.**—Pres., A. A. McDonald, 556 Superior st.; R. S., Maude Myles, 186 23d av.; F. S., N. Hall.

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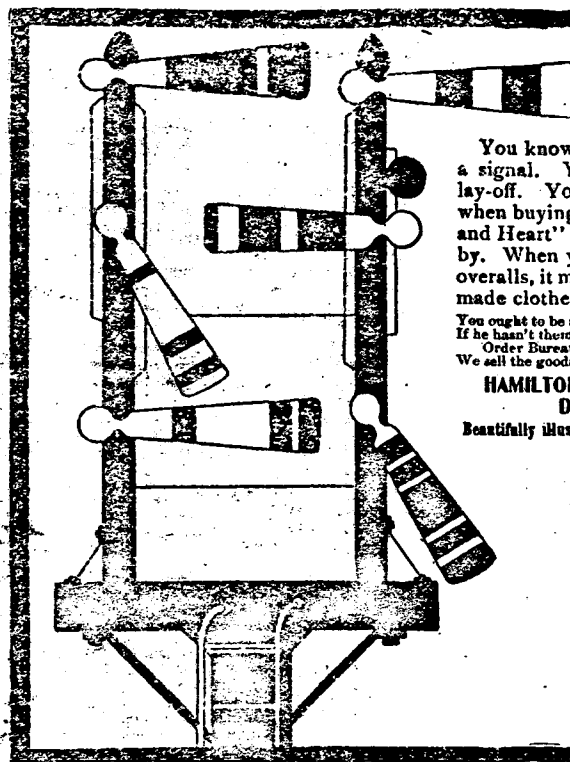
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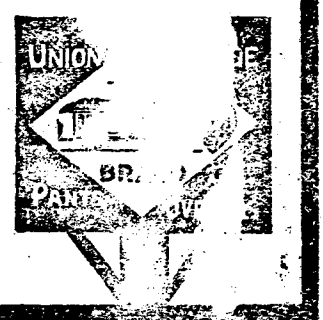
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